

REMARKS

1. In the Office Action filed on May 4, 2005, the Examiner rejected most of the claims of this invention "as being anticipated by Roney" because the Applicant's arguments disclosed in the Response filed on Jan. 21, 2005 was "not persuasive". In this response, we are sending the results of a comparative analyses showing substantial differences between the present invention and the Roney's patent No. 1,450,454. In order to facilitate understanding of these differences, additional figures 1a-1d and 2a-2d are enclosed. This additional figures not supposed to be included in this Application and the patent that will be issued.

Figures 1a, 1b, 1c, 1d schematically illustrate positions of the propeller blades 57 and 58 after each 90 degrees of rotation of the driving shaft 21 in the present invention. The identical details in figures 1a, 1b, 1c, 1d and in the relative figures 4a, 4b, 5 in this Application have the same designations. Arrow A designates the direction of rotation of the driving shaft 21 together with the gearbox 44. Arrows B and C designate the direction of movement of the propeller blades 58 and 57, relatively, as a result of their rotation around the radial axis 49-50. Arrow D designates the direction of movement of the propeller blades 58, 57 as a result of their rotation around the driving shaft 21.

Figures 2a, 2b, 2c, 2d schematically illustrate positions of the paddle parts 15a and 15b after each 90 degrees of rotation of the

driving shaft 5 in Roney's patent. The identical details in figures 2a, 2b, 2c, 2d and in the relative figures 1, 2 in Roney's patent have the same designations. (Paddle parts 15, 15 have designated as 15a, 15b to distinguish them). Arrow E designates the direction of rotation of the driving shaft 5 together with the casing 12.

Referring now to Figs. 1a and 2a, the gearbox 44 of the present invention and relative lubricant casing 12 of Roney's patent are in the positions when the axis of the radial axes 49-50 in the present invention and the relative axis of the radial axle members 2, 2 in Roney's patent are disposed horizontally. In these positions, the propeller blades 58, 57 are disposed in parallel planes which are perpendicular to the radial axis 49-50, while the paddle parts 15a, 15b are disposed along the radial axis 2-2 in the planes that are perpendicular to each other.

Referring now to Figs. 1b and 2b, the radial axis 49-50 in the present invention and the radial axis 2-2 in the Roney's patent are disposed vertically, after the driving shafts (12, 5) are turned 90 degrees together with gearbox 44 and lubricating case 12, relatively.

In this position, the propeller blades 57, 58 remain disposed in the planes which are parallel to each other and perpendicular to the radial axis 49-50. Because the blades 57, 58 are turned 90 degrees around the radial axis 49-50 simultaneously with the rotation of the driving shaft, they are oriented parallel to the driving shaft 21 in the position of Fig. 1b.

The paddle parts 15a, 15b, in this position, remain disposed along the radial axis 2-2. They are oriented vertically in opposite directions from the driving shaft 5. Because the speed of rotation of the paddle parts 15a, 15b are twice less than the speed of rotation of the driving shaft 5, they are turned 45 degrees while the driving shaft is turned 90 degrees.

In Figs. 1c, 2c, the propulsion systems are shown in the positions when driving shafts 21 and 5 are turned 180 degrees from the positions of Figs. 1a and 2a, relatively.

In Figs. 1d, 2d, the propulsion systems are shown in the positions when driving shafts 21 and 5 are turned 270 from the positions of Figs. 1a and 2a, relatively.

As can be seen, in the present invention the propeller blades (57a, 58a, etc.) are oriented in the planes of rotation which are perpendicular to the respective radial axes of rotation so that the flat surfaces of the propeller blades are always perpendicular to the respective radial axes.

This is reflected in the claims of the present Application. Claim 2 (see page 17 lines 22-24), claim 9 (see page 19 lines 19-21) and claim 15 (see page 20 lines 31-33) of the present Application are teaching that "said substantially flat propeller blades are disposed substantially in planes of rotation around the radial axes."

As can be seen in the figures, as a result of double rotation simultaneously around the driving shaft and the radial axes, the propeller blades of the present transverse propeller are moving

along complicated trajectories with changeable orientation relative to the axis of the driving shaft. If the speeds of rotation of such propeller blades around the radial axes are exactly equal to their speed of rotation around the axis of the driving shaft, the both blades are oriented vertically downward as shown in Figs. 1a and 1c. In this positions, the both blades are moving along the arrow D developing a propulsion force for a watercraft. Simultaneously, the blades are moving along the arrows B and C. During each turn of the driving shaft, each propeller blade produces two propulsion strokes.

When the blades are changing their orientations from the positions of Figs. 1b, 1d to the positions of Figs. 1c, 1a, relatively, the blades 57, 58 can be plunging into the water (if the driving shaft is disposed over the water line) with increasing of circumferential velocity relative to the driving shaft.

The claims of the present Application which are teaching the necessity of the same speed of rotation of the propulsion blades around the driving shaft and around the radial axes. Claim 1 (see page 17 line 9) teaches "rotating the propelling means simultaneously around said transverse axis and around said two radial axes with the same speed". Claim 8 (see page 18 lines 33-34, page 19 lines 1-3) teaches that two radial output shafts is disposed substantially perpendicular to the driving shaft and is constrained by the planetary gear engagement to rotate with the speed of rotation of said driving shaft". Claim 15 (see page 20

lines 22-25) teaches that "the radial output shafts being constrained by planetary gear engagement to rotate with the speed of rotation of said planetary gearbox.

As can be seen in the Figs. 2a, 2b, 2c, 2d, in Roney's patent, the paddle parts 15a, 15b are moving around the driving shaft 5 along circular trajectories and the flat surfaces of the paddles are always oriented along the radial axes 2-2. With such orientation of the paddle parts they must be rotated around the radial axes with a speed that is twice less than rotation of the driving shaft. That is why Roney's patent is teaching that "said gears have a two-to-one ratio" (see claim 1, page 2 lines 61-62) and "there is means for half-turning the paddles of said propellers at each revolution" (see claim 2, page 2, right column lines 70-71).

Applicant believes that this analyses has proved that the present Application and the Roney's patent relate to completely different propulsion systems with absolutely different manner of movement of the working blades and different methods of developing the propulsion force.

2. As regards the preliminary amendment filed November 12, 2004, Applicant can agree with the Examiner that "a general reference to particular subject matter is not enough to support the disclosed details unless they originally described in such detail in the specification".

However, Applicant draws the Examiner's attention to the fact that all these details are not the subject of the invention both

in the original specification and in the preliminary amendment and they have no reflection in the claims 1-20.

The invented transverse propeller of the any disclosed embodiment can be mounted on different types of the watercraft and outboard engines without confining to the details such as various engine case extension of different shapes or sizes and having different inner design including gear engagements, shafts couplings, etc. These details can be of any desired type and may be shown or not shown in the drawings without any influence on this invention. That is why these well known details of an outboard engine cannot define any "old or new matter" of the invention.

4. In this regard, Applicant respectfully submits that the Application is in condition for allowance and solicits early notification of same.

Respectfully submitted



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Enclosed:

1. Two sheets of drawings 1a, 1b, 1c, 1d, 2a, 2b, 2c, 2d.

These additional drawings are not supposed to be included in the present Application or the patent that will be issued.